

KSLCA

Activities of the Korean Society for Life Cycle Assessment

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1 Introduction

LCA is a rapidly advancing and changing field. Not only is the span of knowledge heavily expanding – the demand for consistent, usable guidelines continues to grow as well. LCA was introduced in Korea around 1990. Corresponding to the vigorously ongoing process of LCA-ISO standardization, various activities related to LCA have been recently initiated in Korea. A domestic framework for performing LCA was set up through continuous methodology development and advances in relevant databases. Based on this progress, interest in LCA has accelerated rapidly during the recent years. Along with the dynamic activities of government, industry, and academia, the Korean Society for Life Cycle Assessment (KSLCA) was established on December 1st, 1997 and has become the conduit for distributing LCA to different societal sectors and for reporting its research activities, thus contributing significantly to the strengthening of the Korean LCA infrastructure.

2 Organization and Annual Activities of KSLCA

KSLCA has received much support and many members from industries, universities, research institutions, and consumer organizations despite the severe economic conditions here in Korea. So far, a total of two hundred individuals and fifty companies actively participate.

The executive council consists of a president and four vice presidents (each two from academia and industry), while the board of directors consists of about twenty members. The board of directors holds biannual meetings to decide society activities and related items, while the meetings of the steering committee are held bimonthly.

KSLCA publishes 3-4 newsletters and one technical journal annually and holds an academic conference once a year. In addition, several symposium workshops and education programs are prepared to provide the members with recent information on methodology development and case studies.

3 LCA Activities

Recent LCA activities in Korea are centered around KSLCA which brings together government, academia, industry, and research organizations. KSLCA strives to deal with a wide range of issues, among others,

- how to provide the tools for understanding usefulness and limitations of LCA

- how to further promote the interest of government, industry, and consumers in LCA concepts as well as the inclusion of research in various industrial sectors
- how to develop databases for commonly used raw materials, utilities, and SOC
- how to make LCA data easier available and amenable to modularization in the future.

The heightened global interest in the application of LCA and its effects has led KSLCA to a vigorous and diverse development of LCA-related activities which may be divided into 4 categories:

1. Policy & Strategy
2. Methodology Development
3. Database Construction
4. Case Studies

(1) Policy & Strategy

Under the auspices of the Korea Accreditation Board (KAB), an advisory committee consisting of experts from academia, industry, and research institutes has participated in the development of LCA standardization at ISO/TC207. In order to induce more active participation and interest from domestic industry, government is adopting the standards as Korean Standard (KS) through the National Institute of Technology and Quality (NITQ). ISO 14040 (LCA-Principles and framework) and ISO 14041 (LCA-Goal and scope definition and inventory analysis) have already been adopted as KS A 14040 and KS A 14041. Additional standardization activities for each stage in LCA will be completed in line with the progress of standardization activities in ISO/TC207/SC5.

Meanwhile, the Ministry of Commerce, Industry & Energy (MOCIE) is encouraging companies

- to establish and maintain an environmental management system (EMS)
- to include LCA concept and methodology in their environmental policies by a law for environmentally sound industrial structures.

This law aims to reduce energy & material consumption and environmental emissions by considering the full life cycle of a product system.

The Ministry of Environment (MOE) also introduced 'designation of an environmentally sound enterprise' system which intends to induce voluntary and life-cycle based activities in industrial sectors.

(2) Methodology Development

Research on methodology development may be divided into the two areas of LCI and LCIA. There is a universal understanding on the framework of LCI based on that proposed by ISO which is utilized here. Therefore, research related to LCI has centered on technical issues such as allocation, data quality and data format.

On the other hand, research on methodology development for LCIA includes fundamental research of weighting methodology and generation of weighting factors that reflect the characteristics of the Korean situation. From October 1998, KAB and KSLCA are jointly working on an MOCIE-sponsored 5-year project to firmly establish the weighting methodology and to calculate the environmental index for major raw materials, processes, energy, transportation, and waste treatments through the computation of the weighting factor. This may enhance design and production of environmentally-friendly products by industry.

(3) Database Construction

Along with the development of LCA methodology, the constructions of relevant databases are absolutely necessary for the efficient practice and promotion of LCA. MOCIE has been actively supporting KSLCA for the development of public databases. Last year, KSLCA initiated a 5-year national research project (1998 – 2003) for about 100 modules of representative raw materials, energy, processes, transport, and waste treatments. During this first year, inventory databases for ethylene, propylene, polypropylene (raw materials), electricity (energy), injection molding (process), and trucking (transportation) are being established. For raw materials, processes, and transportation, the data represent primary information compiled from a representative set of producers and/or users. National average data are collected

and analyzed for electricity since the electricity supply system in Korea is the so-called 'circle network system' which connects the whole country into an electric ring structure.

(4) Case Studies

Supported by the numerous efforts of government and KSLCA to promote LCA, the industrial sectors, especially the large conglomerates, are starting

- to carry out LCA practices for their own products to cope with the ISO 14000 series
- to evaluate potential environmental impacts associated with their products
- to use LCA results for DfE and environmental labeling.

So far, most of these case studies remain at the LCI level since LCIA methodology is still rather weak. For a country like Korea, which imports most of its raw materials from overseas and exports the final product, the practice of LCIA is especially difficult.

Small and medium size enterprises are not as active as large industries. There are very few LCA case studies from S&ME because of budgets restrictions and human resources. Therefore, they are training experts in their own way by participating in LCA-related education programs and workshops sponsored by KSLCA.

4 Summary

KSLCA is still in an early stage of its status. In order to be a focal point for sharing information, databases, and experiences on LCA, persistent efforts by the KSLCA must be continued. With environmental protection continuing to gain importance within the global economic framework, it is expected that LCA will be rapidly vitalized within all aspects of our society. In parallel, the KSLCA will stabilize in Korea very soon.

Life Cycle Assessment Society of Japan (JLCA) and Japan LCA Forum

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Current Status and Needs for Life Cycle Assessment Development in Asian/Pacific Regions

Japan (p. 192, right column)

The key players in the LCA activities are the government, research institutions, industry and academia. The organizational structure of the LCA activities in Japan was not provided.

The cooperation of the industries, government and academia has proven to be very important in advancing LCA activities in the country. With the support of the Ministry of International Trade and Industry (MITI), 250 national, industrial and academic organizations came together in the Japan LCA forum and identified the

needs for LCA development in Japan. As a result of the forum, MITI has provided funds and support for a five-year national project on LCA. The national project's objectives are to develop a standardized LCA methodology for Japan, LCA database, networking systems for LCA information, and applications of LCA in various fields (e.g. industrial production, marketing, environmental administration, promotion and popularization). As LCA requires data not only from local sources, Japan hopes to cooperate with other countries in developing LCA databases.

Please note: There are two organizations in Japan, the "Life Cycle Assessment Society of Japan (JLCA)" and the "Japan LCA Forum". The above chapter refers to the JLCA (Life Cycle Assessment Society of Japan).

Life Cycle Assessment Society of Japan (JLCA)

Number of members: 419, 160 companies, 54 industrial associations.

The management of this organization is supported by government and membership fees. The activities are primarily concentrated on the promotion of LCA, and the development of LCA methodologies. The Japanese name of the society is "LCA Nihon Foramn", which can cause some misunderstanding.

Japan LCA Forum

About 10 companies (mainly package companies). The management is carried by the funds of these companies. Regularly, several workshops are held.